

# CV

Ornob Alam

**Email:** oa832@nyu.edu; ornobalam@icddr.org

## Education

New York University, New York, NY, USA

Ph.D., Biology, August 2019- Present

Thesis Advisor: Michael Purugganan

Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

Sc.M. , Molecular Microbiology & Immunology, 2015

Thesis Advisor: Sabra Klein

Florida State University, Tallahassee, FL, USA

B.Sc., Biological Science, 2013

## Employment History

International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh

**Scientific Writer**, March 2022- Present

New York University, New York, USA

**Graduate Teaching Assistant**

Applied Genomics, Spring 2022, 2023

Principles of Biology I, Fall 2021

Nature Portfolio, Springer Nature, New York, USA

**Editorial Fellow**, June 2021- August 2021

Independent University, Bangladesh, Dhaka, Bangladesh

January 2016- August 2019

a. **Lecturer**, School of Life Sciences. Primarily Microbiology, Immunology, Introductory Biology, and Readings in Biochemistry

b. **Research Associate**, Center for Health, Population, and Development

Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, USA

**Research Associate**, Sabra Klein's Lab, September 2014- May 2015

## Research

Michael Purugganan's Lab at New York University, May 2020- Present

Studying the demographic and adaptive history of domesticated Asian rice (*Oryza sativa*), using next-generation sequencing and population genetics methods

Center for Health, Population, and Development (CHPD), Independent University, Bangladesh, January 2016- August 2019

Contributed to study design and field work planning for large-scale epidemiological studies, and led the Bangladeshi arm of a project on the social impact of the 1947 Partition of British India

Sabra Klein's Lab at Johns Hopkins, January 2014- May 2015

Investigated the effects of testosterone on the outcome of influenza infections in a mouse model

David Gilbert's Lab at Florida State University, January 2012- May 2013

Performed molecular cloning of a gene relevant to the study of replication timing in embryonic stem cells

## Selected Publications

He Q, Tang S, Zhi H, Chen J, Zhang J, Liang H, **Alam O**, Li H, Zhang H, Xing L, Li X, Zhang W, Wang H, Shi J, Du H, Wu H, Wang L, Yang P, Xing L, Yan H, Song Z, Liu J, Wang H, Tian X, Qiao Z, Feng G, Guo R, Zhu W, Ren Y, Hao H, Li M, Zhang A, Guo E, Yan F, Li Q, Liu Y, Tian B, Zhao X, Jia R, Feng B, Zhang J, Wei J, Lai J, Jia G, Purugganan M, Diao X. A graph-based genome and pan-genome variation of the model plant *Setaria*. *Nat Genet.* 2023 Jun 8. doi: 10.1038/s41588-023-01423-w. Epub ahead of print. PMID: 37291196.

**Alam O**, Yusuf R, Rahman O. The Impact of Partition on East Pakistan: Toward a More Nuanced Central Narrative. In: Leaning J, Bhadada S. *The 1947 Partition of British India: Forced Migration and Its Reverberations*. New Delhi, India: SAGE Spectrum; 2022. p. 129-156.

Choi JY, Dai X, **Alam O**, Peng JZ, Rughani P, Hickey S, Harrington E, Juul S, Ayroles JF, Purugganan MD, Stacy EA. Ancestral polymorphisms shape the adaptive radiation of *Metrosideros* across the Hawaiian Islands. *Proc Natl Acad Sci U S A.* 2021 Sep 14;118(37):e2023801118. doi: 10.1073/pnas.2023801118. PMID: 34497122; PMCID: PMC8449318.

**Alam O**, Gutaker RM, Wu CC, Hicks KA, Bocinsky K, Castillo CC, Acabado S, Fuller D, d'Alpoim Guedes JA, Hsing YI, Purugganan MD. Genome Analysis Traces Regional Dispersal of Rice in Taiwan and Southeast Asia. *Mol Biol Evol.* 2021 Oct 27;38(11):4832-4846. doi: 10.1093/molbev/msab209. PMID: 34240169; PMCID: PMC8557449.

Vom Steeg LG, Vermillion MS, Hall OJ, Alam O, McFarland R, Chen H, Zirkin B, Klein SL. Age and testosterone mediate influenza pathogenesis in male mice. *Am J Physiol Lung Cell Mol Physiol.* 2016 Dec 1;311(6):L1234-L1244. doi: 10.1152/ajplung.00352.2016. Epub 2016 Nov 4. PMID: 27815260; PMCID: PMC5206399.

Complete list on Google Scholar

## Conference Talks & Posters

Probabilistic Modeling in Genomics 2023. Cold Spring Harbor Laboratory, New York, NY, USA. Poster

Center for Genomics and Systems Biology Symposium XI, 2023. New York University Abu Dhabi, Abu Dhabi, UAE. Poster

New York Area Population Genetics 2023. Rockefeller University, New York, NY, USA. Poster

Evolution 2022. Cleveland, OH, USA. Talk

Society for Molecular Biology and Evolution 2021. Virtual. Talk

8th Annual Research on Aging Showcase, 2015. Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA. Poster

Undergraduate Research and Creative Activities Awards Symposium, 2012. Florida State University, Tallahassee, FL, USA. Talk

## Science Communication

Research Highlights. Nature Genetics. August & September 2021

Genomic windows into ancient climate change. Molecular Ecologist. 2021

More in Molecular Ecologist: <https://www.molecular ecologist.com/?s=ornob+alam>

Unbraiding the Neanderthal knot in human evolutionary history. Nature Ecology & Evolution Community. 2022

More in Nature Ecology & Evolution Community: <https://ecoevocommunity.nature.com/users/ornob-alam>

Unmasking an ancient scourge. Small Things Considered. 2021

Research highlights and explainers for icddr,b. Example:

icddr,b scientists help reveal a striking geographical pattern of influenza virus epidemics in Bangladesh. 2022

More for icddr,b: <https://www.icddr.org/component/search/?searchword=ornob&ordering=&searchphrase=all>

Designed, curated, and edited a blog featuring science communication articles by undergraduates in the School of Life Sciences at Independent University, Bangladesh, March 2017- March 2019

<http://herebedragonssls.blogspot.com>

## Honors & Awards

Eugene Bell Award at the New York University Biology Graduate program. 2021

Quantitative Biological Systems Training (QBIST) Grant, NIH Project Number: 1T32GM132037-01. 2020

1st place winner (Student category) of 8th Annual Research on Aging Showcase Poster Competition. 2015

Undergraduate Research and Creative Activities Award. 2012

## Service & Mentorship

Facilitator, Respect is a Part of Research (RPR) Workshop, New York University. 2020 & 2022

RPR is a peer-to-peer workshop for first-year PhD students in the Biology department that serves as a space for open discussions on the best steps to take when members experience or witness disrespectful behavior in a workplace or workplace-adjacent context

Mentor, Summer Undergraduate Research Program (SURP), June 2021- August 2021

Designed and supervised a project on visualizing and analyzing human ancient genetic data, led by talented undergraduate Temima Yellin over the summer and the subsequent academic year

## Skills

R; R Shiny. Example: paleoRice

Python

Bash scripting

Building bioinformatics pipelines using Nextflow

Next-generation sequencing and genomic analyses:

DNA extractions from herbarium/historical specimens

Library prep

Variant calling

Population genetics methods and analyses:  
Population structure analyses and clustering  
Admixture graph modeling  
Estimating population size and separating history  
Coalescent and forward simulations  
Demographic inference  
Approximate Bayesian computation (ABC)  
Ancestral recombination graph inference  
Selection scans and analyses  
Gene-environment association analyses